

An Isolated Gate Driver Utilising Simultaneous Wireless Information and Power Transfer



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Background

Isolated gate drivers provide galvanic isolation between the low voltage control circuitry and high voltage power electronic switches. For this purpose, this novel approach utilises a coupling channel at gigahertz frequencies to transmit both the needed power and the switching information to the power switch. This approach has the benefit of a compact size, reduced coupling capacitance and potential semiconductor process integration.

Tasks

Singular or multiple parts of the isolated gate driver shall be simulated, implemented and tested.

The tasks can be adjusted to fit the Bachelor or Master thesis requirements and the students' wishes.

- System design and functionality testing using Keysight ADS
- RF circuit design and implementation
- Measurement
- Documentation of all results in the Bachelor or Master Thesis